

Amendments to the Claims

The following Listing of Claims replaces all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (original): A method of assessing image quality, comprising:
detecting a target object region in an input image;
generating an image quality feature vector representing the target object region in an image quality feature space; and
mapping the image quality feature vector to a measure of image quality.

Claim 2 (original): The method of claim 1, wherein the target object region corresponds to a human face.

Claim 3 (original): The method of claim 1, wherein the target object region corresponds to an object relevant to a person's subjective assessment of image quality.

Claim 4 (original): The method of claim 1, wherein the target object region is detected based on a sub-sampled version of the input image.

Claim 5 (original): The method of claim 4, wherein the image quality feature vector is generated based on a version of the target object region at a resolution of the input image.

Claim 6 (currently amended): The method of claim 1, wherein the detecting comprises detecting the target object region ~~is detected based on~~ a first set of features of the input image, and the generating comprises generating the image quality feature vector ~~is generated based on a second set of features of the input image different from the first set of features.~~

Claim 7 (original): The method of claim 6, wherein the first set of features is substantially decoupled from the second set of features.

Claim 8 (original): The method of claim 1, wherein the image quality feature space is spanned by multiple features including at least one brightness feature describing a respective brightness characteristic of the target object region.

Claim 9 (original): The method of claim 1, wherein the image quality feature space is spanned by multiple features including at least one spectral feature describing a respective spatial frequency characteristic of the target object region.

Claim 10 (original): The method of claim 9, wherein generating the image quality feature vector comprises decomposing the target object region into multiple wavelet transform sub-bands.

Claim 11 (original): The method of claim 10, wherein each spectral feature describes energy in a respective wavelet transform sub-band.

Claim 12 (original): The method of claim 1, wherein the image quality feature space is spanned by multiple features including at least one noise feature describing a respective noise characteristic of the target object region.

Claim 13 (original): The method of claim 12, wherein a noise feature is computed based on a measure of noise in the target object region.

Claim 14 (original): The method of claim 12, wherein a noise feature is computed based on a measure of spatial homogeneity of spectral features each describing a respective spatial frequency characteristic of the target image region.

Claim 15 (original): The method of claim 1, wherein the image quality feature vector is mapped to a measure of image quality in accordance with a machine learning process.

Claim 16 (original): The method of claim 15, wherein the image quality feature vector is mapped to a measure of image quality in accordance with a radial basis function based machine learning process.

Claim 17 (original): The method of claim 15, wherein the image quality feature vector is mapped to a measure of image quality in accordance with a mixture of Gaussian based machine learning process.

Claim 18 (original): A system for assessing image quality, comprising:
a target object region detection module operable to detect a target object region in an input image;
a feature extraction module operable to generate an image quality feature vector representing the target object region in an image quality feature space; and
an image quality assessment module operable to map the image quality feature vector to a measure of image quality.

Claim 19 (original): The system of claim 18, wherein the target object region corresponds to a human face.

Claim 20 (original): The system of claim 18, wherein the feature extraction module detects the target object region based on a sub-sampled version of the input image.

Claim 21 (original): The system of claim 18, wherein the image quality feature space is spanned by multiple features including at least one brightness feature describing a respective brightness characteristic of the target object region.

Claim 22 (original): The system of claim 18, wherein the image quality feature space is spanned by multiple features including at least one spectral feature describing a respective spatial frequency characteristic of the target object region.

Claim 23 (original): The system of claim 22, wherein the feature extraction module is operable to generate the image quality feature vector by decomposing the target object region into multiple wavelet transform sub-bands.

Claim 24 (original): The system of claim 23, wherein each spectral feature describes energy in a respective wavelet transform sub-band.

Claim 25 (original): The system of claim 18, wherein the image quality feature space is spanned by multiple features including at least one noise feature describing a respective noise characteristic of the target object region.

Claim 26 (original): The system of claim 25, wherein the feature extraction module computes a noise feature based on a measure of noise in the target object region.

Claim 27 (original): The system of claim 25, wherein the feature extraction module computes a noise feature based on a measure of spatial homogeneity of spectral features each describing a respective spatial frequency characteristic of the target image region.

Claim 28 (original): The system of claim 18, wherein the image quality assessment module maps the image quality feature vector to a measure of image quality in accordance with a machine learning process.

Claim 29 (original): The system of claim 28, wherein the image quality assessment module maps the image quality feature vector to a measure of image quality in accordance with a radial basis function based machine learning process.

Claim 30 (original): The system of claim 28, wherein the image quality assessment module maps the image quality feature vector to a measure of image quality in accordance with a mixture of Gaussian based machine learning process.

Claim 31 (original): A system for assessing image quality, comprising:
means for detecting a target object region in an input image;

means for generating an image quality feature vector representing the target object region in an image quality feature space; and

means for mapping the image quality feature vector to a measure of image quality.

Claim 32 (currently amended): A machine-readable medium storing machine-readable instructions for causing a machine to perform operations comprising:

~~detect~~ detecting a target object region in an input image;

~~generate~~ generating an image quality feature vector representing the target object region in an image quality feature space; and

~~map~~ mapping the image quality feature vector to a measure of image quality.

Claim 33 (original): A method of generating an image quality assessment engine, comprising:

detecting target object regions in multiple input images;

generating image quality feature vectors representing the target object regions in an image quality feature space;

correlating the image quality feature vectors with respective measures of image quality assigned to the input images; and

computing a mapping between image quality feature vectors and assigned measures of image quality.

Claim 34 (original): The method of claim 33, wherein the target object region corresponds to a human face.

Claim 35 (original): The method of claim 33, wherein the image quality feature space is spanned by multiple features including at least one brightness feature describing a respective brightness characteristic of the target object region.

Claim 36 (original): The method of claim 33, wherein the image quality feature space is spanned by multiple features including at least one spectral feature describing a respective spatial frequency characteristic of the target object region.

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Serial No. : 10/694,143
Filed : Oct. 27, 2003
Page : 7 of 11

Attorney's Docket No.: 200310055-1
Amendment dated Aug. 2, 2007
Reply to Office action dated May 3, 2007

Claim 37 (new): The system of claim 18, further comprising a computer-readable storage medium and a computer processor.